IN THE CLAIMS

Please amend the claims as follows:

1. (Previously Presented) A labeled proteinoid microsphere comprising a mixture of amino acids that are thermally condensed and a label comprising a fluorophore, a chemiluminescent molecule, a radioisotope, a paramagnetic ion, or an enzyme; wherein the label is covalently linked to an external surface of the proteinoid microsphere; and the proteinoid microsphere is stable in solution.

2. (Previously Presented) A labeled proteinoid microsphere comprising a mixture of amino acids that are thermally condensed and a label covalently linked to the external surface of the proteinoid microsphere, wherein the label is barium sulfate, iocetamic acid, iopanoic acid, ipodate calcium, diatrizoate sodium, diatrizoate meglumine, metrizamide, tyropanoate sodium, fluorine-18, carbon-11, iodine-123, technitium-99m, iodine-131, indium-111, fluorine, gadolinium, fluorescein, isothiocyalate, rhodamine, pacific blue, phycoerythrin, phycocyanin, allophycocyanin, ophthaldehyde, fluorescamine, luminal, isoluminal, luciferin, luciferase or aequorin; and the proteinoid microsphere is stable in solution.

3. (Previously Presented) The labeled proteinoid microsphere of claim 1 wherein the proteinoid microsphere is formed by thermal condensation of the mixture of amino acids in the presence of a crosslinking agent such that the proteinoid microsphere further comprises a crosslinking agent.

4. (Original) The labeled proteinoid microsphere of claim 3 wherein the crosslinking agent is carbodiimide, glutaraldehyde, N-(m-maleimidobenzoyloxy)-succinimide, a bifunctional sulfhydral reagent.

5. (Previously Presented) The labeled proteinoid microsphere of claim 1 that is synthesized for signal amplification or diagnostic imaging.

6. (Cancelled).

7. (Previously Presented) A labeled proteinoid microsphere that is capable of binding to a specific target comprising a proteinoid microsphere covalently linked to a label and a selective binding moiety that can bind to a specific target, wherein the label comprises a fluorophore, a chemiluminescent molecule, a radioisotope, a paramagnetic ion, or an enzyme; and wherein the proteinoid microsphere comprises a mixture of amino acids that are thermally condensed; the label is covalently linked to the external surface of the microspheres; and the proteinoid microsphere is stable in solution.

8. (Cancelled)

9. **(Currently Amended)** A labeled proteinoid microsphere that is capable of binding to a specific target comprising a proteinoid microsphere covalently linked to a label and a selective binding moiety that can bind to a specific target, wherein the label is barium sulfate, iocetamic acid, iopanoic acid, ipodate calcium, diatrizoate sodium, diatrizoate meglumine, metrizamide, tyropanoate sodium, fluorine-18, carbon-11, iodine-123, technitium-99m, iodine-131, indium-111, fluorine, gadolinium, fluorescein, isothiocyalate, rhodamine, pacific blue, phycoerythrin, phycocyanin, allophycocyanin, ophthaldehyde, fluorescamine, luminal, isoluminal, luciferin, luciferase or aequorin; and wherein the proteinoid microsphere comprises a mixture of amino acids that are thermally condensed; wherein the label is covalently linked to an external surface of the proteinoid microsphere; and the proteinoid microsphere is stable in solution.

10. (Previously Presented) The labeled proteinoid microsphere of claim 7 wherein the proteinoid microsphere is formed by thermal condensation of a mixture of amino acids in the presence of a crosslinking agent such that the proteinoid microsphere further comprises a crosslinking agent.

11. (Previously Presented) The labeled proteinoid microsphere of claim10 wherein the crosslinking agent is carbodiimide, glutaraldehyde, N-(m-maleimidobenzoyloxy)-succinimide, a bifunctional sulfhydral reagent.

12. (Previously Presented) The labeled proteinoid microsphere of claim 7 wherein the selective binding moiety is an antibody, a ligand, a receptor, a peptide, a peptidyl analogue or a polypeptide.

13. (Previously Presented) The labeled proteinoid microsphere of claim 7 that is labeled for use in an immunoassay.

14. (Previously Presented) The labeled proteinoid microsphere of claim 13 wherein the immunoassay is a radioimmunoassay, an ELISA, an immunofluorescence assay or a sandwich assay.

15. (Previously Presented) The labeled proteinoid microsphere of claim 7 that is labeled for use in diagnostic imaging or signal amplification.

16. (**Currently Amended**) The labeled proteinoid microsphere of claim 15[[7]] wherein the signal amplification is at least about thirty-fold relative to an antibody preparation linked to the same label.

17. (Previously Presented) A labeled proteinoid microsphere that is capable of binding to a specific target comprising a proteinoid microsphere covalently linked to a label and an antibody that can bind to a specific target, wherein the label comprises a fluorophore, a chemiluminescent molecule, a radioisotope, a paramagnetic ion, or an enzyme; and wherein the proteinoid microsphere comprises a mixture of amino acids that are thermally condensed; the label is covalently linked to the external surface of the microspheres; and the proteinoid microsphere is stable in solution.

18. (Original) The labeled proteinoid microsphere of claim 17 wherein the proteinoid microsphere comprises a thermally-condensed mixture of amino acids comprising an acidic amino acid and a basic amino acid.

19. (Cancelled)

20. (Previously Presented) The labeled proteinoid microsphere of claim 18 wherein the acidic amino acid is aspartic acid or glutamic acid or a mixture of both.

21. (Previously Presented) The labeled proteinoid microsphere of claim 18 wherein the basic amino acid is arginine or lysine, or a mixture of both.

22. (Previously Presented) The labeled proteinoid microsphere of claim 18 wherein the mixture of amino acids further comprises cysteine.

23. (**Cancelled**) A labeled proteinoid microsphere comprising a mixture of aspartic acid, glutamic acid, asparagine, arginine, and serine amino acids that are thermally condensed and a label comprising a fluorophore, a chemiluminescent molecule, a radioisotope, a paramagnetic ion, or an enzyme; wherein the label is linked to the proteinoid microsphere; and the proteinoid microsphere is stable in solution.

24. (**New**) A labeled proteinoid microsphere comprising a mixture of aspartic acid, glutamic acid, asparagine, arginine, and serine amino acids that are thermally condensed and a label comprising a fluorophore, a chemiluminescent molecule, a radioisotope, a paramagnetic ion, or an enzyme; wherein the label is covalently linked to the proteinoid microsphere; and the proteinoid microsphere is stable in solution.